

# A TREATISE ON ECHINACEA

DISCOVERY. Dr. H. C. F. Meyer.

INTRODUCTION BY AMERICAN INDIANS. Dr. J. S. Leachman.

INTRODUCTION TO AMERICAN PHYSICIANS. Dr. John King.

MICROSCOPY. By Professor C. T. P. Fennel.

ORIGINAL LABELS. Lloyd Brothers.

ECHINACEA VALUELESS. American Medical Association Journal.

PHYSICIANS' ARTICLES COMMENDING ECHINACEA (1888-1901). Dr. J. S. Hayes, Dr. Herbert T. Webster, Dr. C. H. Rigg, Dr. F. Milton Friend, Dr. E. R. Waterhouse, Dr. J. C. Paxon, Dr. J. C. Kilgour, and Dr. H. W. Felter, Editorials in E. M. Journal.

COMMENDATIONS FROM WORKS ON MATERIA MEDICA AND PRACTICE. "The Physicians' and Students' Ready Guide to Specific Medication," Niederkorn; "A Handy Reference Book," Niederkorn; "Locke's Materia Medica and Therapeutics," edited by Felter; "Compendium of the Practice of Medicine," Watkins; "King's American Dispensatory," King; "Dynamical Therapeutics," Webster; "Eclectic Practice of Medicine," Thomas; "The Essentials of Medical Gynecology," Stephens; "Specific Diagnosis and Medication," Fyfe; "New American Materia Medica, Therapeutics and Pharmacognosy," Ellingwood.

HISTORY, DESCRIPTIONS, ADULTERATIONS AND GENERAL ARRANGEMENT. John Uri Lloyd.

Treatise No. I—*Thuja Occidentalis*.

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Treatise No. XXX—*Echinacea*.

## Drug Treatise, No. XXX.

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# Echinacea Angustifolia.

JOHN URI LLOYD, PHAR. M.

Botanical Distribution and Related Plants.—*Echinacea angustifolia*, DC., known also as *Brauneria pallida* (Nutt.) and *Rudbeckia pallida* (Nutt.) (Figs. 1 and 2) is found chiefly west of the Mississippi River, being widely distributed from the Northwest southward, into Texas. From its beehive-shaped flower-cone, it is commonly known as "Cone Flower," a name that in various sections is also applied to closely related species of the Composite Family, such as *Rudbeckia purpurea* (Linn.) known also as *Echinacea purpurea* (Moen.) This, added to the fact that both plants are widely known under the common names "Black Sampson" and "Niggerhead," (the name "Indian head" being apparently a local Western designation), has led to much commercial confusion. We find, indeed, that the latter plant, *Rudbeckia purpurea* (*Echinacea purpurea*) was recognized in medicine long before the therapeutic properties of *Echinacea angustifolia* were discovered, being described in the first edition of King's *American Dispensatory*, 1852, where its therapeutic uses are given, practically the same as those of *Echinacea angustifolia*.<sup>1</sup>

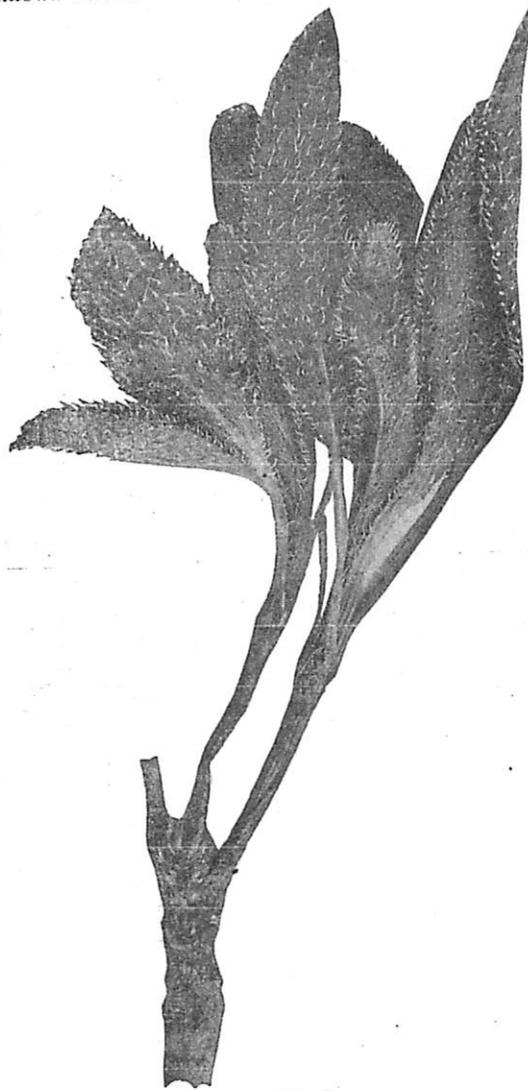


Fig. 1.  
*Echinacea angustifolia*, young plant.

<sup>1</sup>In Gray's Manual of Botany, 1862, we find, under *Echinacea purpurea*, the following: "Root thick, black, very pungent to the taste, used in popular medicine under the name of Black Sampson."

## ECHINACEA ANGUSTIFOLIA.

### HISTORY OF ECHINACEA.

**Discovery.**—In the fall of 1885 I received from Dr. H. C. F. Meyer,<sup>1</sup> of Pawnee City, Nebraska, the root of a plant that he wished named. (Fig. 3.) He stated that he used it in making "Meyer's Blood

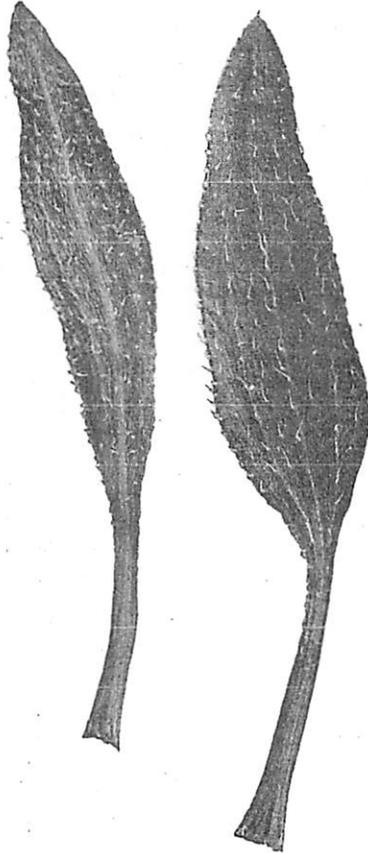


Fig. II.  
Leaf of *Echinacea angustifolia*.

Purifier," a remedy heralded in large type by his letterhead. At the same time, he sent to Professor John King a bottle of the preparation, making for it the most exaggerated claims (see label, page 18). Dr. King replied that he could do nothing with a secret mixture or a drug that was not properly named. If the remedy were to be presented to the medical profession through him, it must be under its true botanical name, that being the rule of the physicians in his school of medicine. I also wrote Dr. Meyer that the plant could not be determined by the root alone, as it was not a familiar drug, and that it was the rule of our establishment that every remedy introduced to the



Fig. III.

*Echinacea angustifolia*. The original specimen (1885) of Dr. H. C. F. Meyer from which this cut was made is in the Lloyd Library. The cut is one-fourth larger than the dried specimen, but much *Echinacea* reaches this size.

Dr. Meyer was an illiterate empiricist. I do not know whether he ever graduated in medicine, nor whether he ever practiced, other than in the sale of his preparation of *Echinacea*. Nor yet do I know how he obtained his information concerning the properties and uses of the drug, but this was probably from the Indians, by whom it was elsewhere used for purposes similar to those described by Dr. Meyer. This empirical introduction, however, cannot be taken as an indication of either the worthlessness or value of the drug. The history of the entire vegetable materia medica of the world, is to the effect that all the pharmacopoeial vegetable drugs were empirically introduced. Witness the record of *Cinchona*, which, as "Jesuits' bark," was bitterly condemned by physicians in authority.

—J. U. L.

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profession by us, must be under its true name. Under date of June 7, 1886, Dr. Meyer sent me, care Lloyd Brothers, a large box of the root (Fig. IV) and finally, September 28, 1886, he mailed me the whole plant, which was identified (Figs. 1 and 2) by Mr. C. G. Lloyd as *Echinacea angustifolia*, DC.<sup>1</sup>

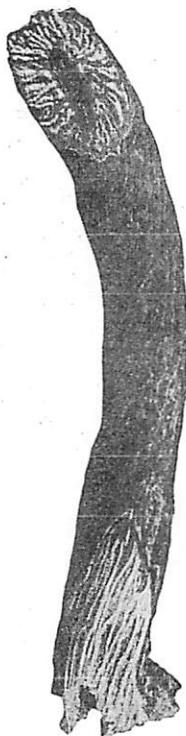


Fig. IV.  
*Echinacea angustifolia*,  
dry, natural size.

Dr. Meyer's exaggerated claims in behalf of *Echinacea* strongly prejudiced me against it. Professor King, however, with a more comprehensive view of problems such as this,<sup>2</sup> decided to give it a fair therapeutic investigation, and at his request I proceeded to institute a careful series of pharmaceutical experiments with *Echinacea*. Dr. King, indeed, soon developed a strong personal interest in the drug, the tincture of which was found to be a palliator in the treatment of Mrs. King, who at that time was afflicted with a virulent cancer. Twice when my supply of the root was exhausted, and once when a poor quality of the drug was employed, Dr. King was much disturbed because of the alarming progress made by the disease. At this time my own skepticism relative to the drug was so great that I reluctantly made the preparation, only because of my friendship for Mrs. King, who found this to be the only remedy that gave her any relief. (See letter of Dr. King's daughter, Mrs. Karr, p. 32.)

Dr. King continued his investigations of *Echinacea*, both in his general practice and by correspondence with physician consultants, becoming therefrom so convinced of its value that in 1887 he announced it to the medical profession, in a conservative, signed article, contributed to the *Eclectic Medical Journal*, that date, page 209. In this he credits Dr. Meyer with the discovery of the therapeutic qualities of *Echinacea*, as follows:

"In a recent letter to me Dr. Meyer states that he discovered the therapeutical value of the root of this plant sixteen years ago, and that, having satisfactorily tested it in practice, he is now desirous of placing it in the hands of the medical profession, and has requested me to arrange his statements into an article for the *E. M. Journal*, on account of his imperfections in our language, he being a German.

<sup>1</sup>The letters of Dr. Meyer, together with specimens of his original drug (see figs. 3 and 4), specimens of many of its commercial adulterations and sophisticants and historical prints connected with this study, are deposited in the Lloyd Library.—J. U. L.

<sup>2</sup>I am not sure but Dr. King's study of the related plant *Echinacea purpurea*, described by him in his "American Dispensary," 1862, as having similar properties, may have been accepted as an introduction.—J. U. L.

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It will be observed from what follows that he entertains a very exalted idea of his discovery, which certainly merits a careful investigation by our practitioners; and should it be found to contain only one-half the virtues he attributes to it, it will form an important addition to our materia medica."

So enthusiastic was Dr. Meyer in behalf of Echinacea, and so convinced of its value as an antidote to the bites of poisonous reptiles, that he wished to make a personal demonstration in this direction before a committee. Let me quote from a contribution I made to Dr. Niederkorn on this subject:<sup>1</sup>

"Within a short time after the identification of Echinacea, Dr. Meyer wrote to Dr. King and myself, urging us to give the profession the benefit of his discovery. In view of our incredulity as to the virtues of the drug in the direction of the bites of poisonous serpents, he offered to come to Cincinnati and, in the presence of a committee selected by ourselves, allow a rattlesnake of our selection to bite him wherever we might prefer the wound to be inflicted, proposing then to antidote the poison by means of Echinacea only. This offer (or rather, challenge) we declined. Dr. Meyer, thinking this was because we had no serpent at our command, again offered not only to come to Cincinnati and submit to the ordeal formerly proposed, but to bring with him a full-sized rattlesnake, possessed of its natural fangs, allow it to bite him repeatedly, under the auspices of a selected committee, and having them use the antidote, to demonstrate to the profession the value of Echinacea as a remedy for a *human being* thus inoculated. This offer was also declined."

Echinacea having been announced to the profession by the afore given article of Dr. King, Dr. I. J. M. Goss, of Atlanta, used it in his practice and became impressed with its value. Professor H. T. Webster, of Oakland, California, next investigated it clinically, and commended it highly in many places in his "*Dynamical Therapeutics*;" Dr. Finley Ellingwood's publications were also exceptionally favorable to the drug. (See *Therapeutic Uses*.) In 1893, Mr. C. G. Lloyd, who originally identified the plant for Dr. Meyer, contributed to the *Eclectic Annual*, Vol. IV, p. 332, a paper on its botany and plant relationships, and in the same publication Dr. Felter made a resumé of its therapeutic uses and history in medicine.

**Summary.**<sup>2</sup>—"The drug was first introduced by Dr. H. C. F. Meyer, of Pawnee City, Nebraska, 1885, in his 'Meyer's Blood Purifier,' which, however, had been in use by him previous to that date. It was next studied by Professor John King, of Cincinnati; then by Professor H. T. Webster, of Oakland, California, and Professor I. J. M. Goss, of Atlanta, Georgia, Dr. Finley Ellingwood, and others. Through their commendations and discussions of physicians, the

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<sup>1</sup>"Echinacea in the Treatment of the Bites of Venomous Serpents, Reptiles, and Insects." Niederkorn, 1910.

<sup>2</sup>From the original article by John Uri Lloyd contributed to the *Eclectic Medical Journal*, 1897.

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preparations of Echinacea became first known to Eclectic physicians. The plant was identified and named for Dr. Meyer, by Mr. C. G. Lloyd, in 1886."

**Characteristics.**—Dried Echinacea root (Figs. 3 and 4) has a brown or brown-red color. It is much wrinkled and twisted longitudinally, the folds of the shrunken epidermis being often twined about the root in spiral form. When sliced transversely, the yellowish medullary rays are seen to be separated by a greenish pulp, and the fracture of the broken, dried root appears to have been afflicted with "dry rot." Upon chewing the root of prime echinacea, a sweetish taste becomes first apparent, which on prolonged chewing is followed by an acrid, tingling sensation that remains long upon the tongue. This tingling reminds one somewhat of aconite, and more than one physician has inferred from this tingling taste that, by mistake, aconite has been sold under the echinacea label. The numbing quality of aconite, however, is absent. In my opinion, mezereum more nearly parallels the taste of echinacea, but is much more acrid. In my early experiences with Echinacea root, I found insipid, tasteless lots of the genuine drug, which proved worthless in medicine. On investigation it was discovered that these all came from low lands east of the Mississippi River, and further experience confirmed me in the opinion that the drug should be of Western origin.

**Microscopy.**—In 1911 Professor Henry Kraemer<sup>1</sup> contributed to the New Jersey Pharmaceutical Association a micro-description of Echinacea, together with an interesting article on Echinacea, illustrated by admirable drawings.<sup>2</sup> Professor Fennel<sup>3</sup> made the photo-illustrations and descriptions of the specimen of Echinacea presented in our study, the drug used being the original specimen Dr. Meyer (Figs. 3 and 4) sent in 1886. His description is as follows:

*Microscopy* of Echinacea root, as received from Prof. J. U. Lloyd.

"The specimens were of varying thickness—from 6 mm. (6/25 inch) to 12 mm. (12/25 inch), light grayish to brown in color, wrinkled longitudinally, with a slight spiral twist, fibrous with a short break.

"*Internally*—very small round pith (1—1.5 mm.), medullary rays very fine and adjoining black parenchyma. Cambium, a faint line. Structure of the wood wedges, annular and pitted, the accompanying parenchyma black in color, of uniform thickness, straight ends thickening of the walls—Fundamental tissue—spongy. The radial elongated cells in two rows (medullary rays) somewhat crowded out of radial lines. Corky layer thin, hypodermis, 2-3 layers of tabular cells, tangentially elongated constituting a very thin bark. Phloem tissue, thin walled and tapering to a point almost to the corky layer. The Bark proper apparently devoid of Bast and Stone cells. Resin cells on both sides of the cambium. The wood wedges (light yellow and black) and the medullary rays

<sup>1</sup>Author of "Scientific and Applied Pharmacognosy." Dr. Kraemer's paper is of exceeding interest because of its systematic study of the plant, as well as its microscopy.

<sup>2</sup>Published in the *American Druggist*, 1912, pp. 23 and 24.

<sup>3</sup>Chas. T. P. Fennel, Ph.G., Phar.D., Professor of Theoretical and Applied Chemistry in the Cincinnati College of Pharmacy; author of "Principles of General Pharmacy and Chemistry," now (1917) appearing in fascicles.

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open into each other in a very profuse manner, making it extremely difficult to section the dried root, transversely as well as vertically. The accompanying micro-photographs (figures 5 to 9) feature the main structures of the root."—  
C. T. P. Fennel.

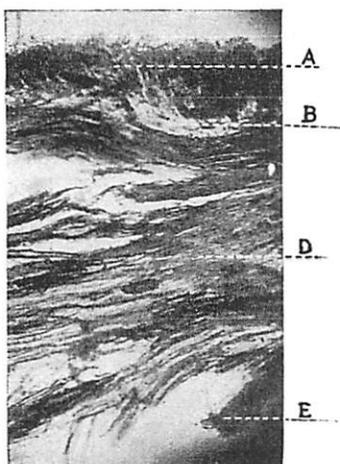


Fig. V. (200 X.)

- A. Corky layer.
- B. Hypodermis.
- D. Wood wedges—Yellow.
- E. Wood wedges—Black.

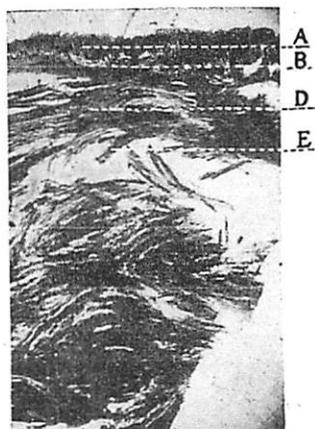


Fig. VI. (50 X.) Longitudinal Section.

- A. Corky layer.
- B. Hypodermis.
- D. Wood wedges—Yellow.
- E. Wood wedges—Black.

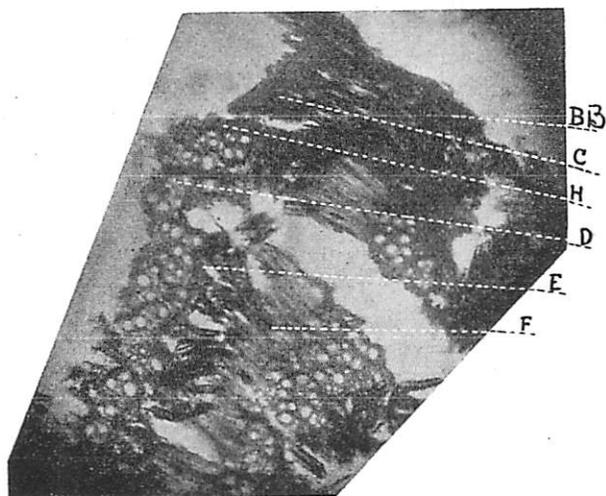


Fig. VII. (200 X.) Transverse Section.

- BB. Hypodermis 2-3 layers of tabular cells tangentially elongated, practically cortex.
- C. Phloem tissue, tapering into corky layer.
- D. Wood wedges, light yellow, numerous tracheal tubes.
- E. Wood wedges, black, short.
- F. Medullary ray.
- H. Cambium line.

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**Constituents.**—Echinacea contains minute amounts of a colorless alkaloid. This, however, seems not to be the characteristic constituent of the drug, although it is not to be accepted that the influence of combined minor constituents in a drug complexity are negative.

- A. Corky layer.
- B. Hypodermis.
- C. Phloem tissue.
- D. Wood wedges—Yellow.
- E. Wood wedges—Black.
- F. Medullary ray.
- G. Fundamental tissue.

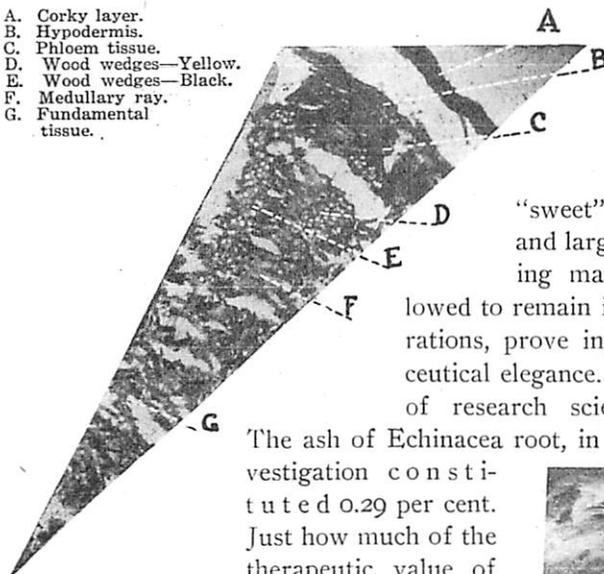


Fig. VIII. (50 X).  
Transverse Section.

The ash of Echinacea root, in our combustion investigation constituted 0.29 per cent. Just how much of the therapeutic value of Echinacea is due to this mineral constituent when in its organic colloidal combination in the drug and its preparations, has not as yet been determined. In my opinion, it may yet be found of unexpected importance. Echinacea carries also, as its most marked "organic" constituent,<sup>2</sup> a colorless substance of acid reaction, that is intensely and persistently acrid; most distressingly so, when in pure condition. It is obtained from prime Echinacea in less than one-half of one per cent.

There is also much plant "sweet" of a peculiar kind,<sup>1</sup> and large amounts of coloring matters which, if allowed to remain in Echinacea preparations, prove injurious to pharmaceutical elegance. This opens a field of research scientific opportunity.

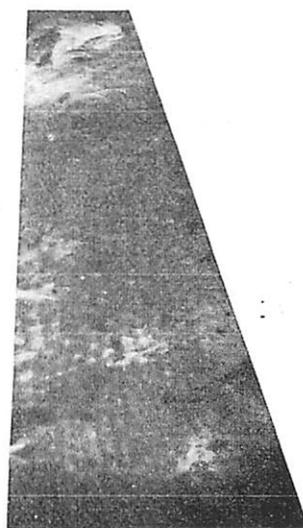


Fig. IX (400 X) Transverse Section.  
Single phloem area opposite a single wedge of yellow wood (Cf. Fig. VII).

<sup>1</sup>I found no trace of sugar in the molasses submitted to me, but a great mass of impurities of all kinds. In my opinion, the plant cannot be utilized at all in the sugar line. *Report on the sweet principles of Echinacea angustifolia, by Mr. Luther Carpenter, Bay City, Mich.*

<sup>2</sup>The term "organic" is here used in its generally accepted sense. Personally, I have long since abandoned the view that plant-assimilated "earthy" products are "inorganic." In my opinion, often expressed in various publications, the functions of the mineral constituents of the living plant, are not less "organic" than are the inter-combined compounds of carbon, oxygen, hydrogen, and nitrogen. Nor are their "activities" to be ignored in pathological and therapeutical directions.—J. U. L.

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"Brownian Movements."—If Specific Medicine Echinacea be viewed with a high power objective under either direct light or the ultra microscope (dark lens), nothing whatever is to be seen. If a dilution



Fig. A.

Brownian points in 1 per cent water dilution of Specific Medicine Echinacea. Bear in mind that a needle point is magnified to this size.

be made, one part to nine parts of water, the direct ray microscope brings no object to view, although the mixture is opalescent, but under the dark field microscope<sup>1</sup> a maze of active, brilliant "Brownian" star-like vibrations appear, too numerous to be satisfactorily counted by the Haemacytometer (Thoma). Follow now the decimal Homeopathic rule of dilution, one part of each preceding dilution to nine parts of distilled water, (1 in 10), and the "Brownies" are to be seen, decreasingly, even to the fifth dilution.<sup>2</sup> For our calculation, the filtered second decimal dilution (equivalent to a one per cent., or 1 in 100 solution), of Specific Medicine Echinacea was employed. In this, the number of Brownian points per cubic millimeter, as shown by the ultra microscope, was estimated to be 2,300,000, thus showing that 1 Cc of Specific Medicine Echinacea was, under the dilution process employed, capable of producing 2,300,000,000 Brownian points.

The relationship between Brownian movement-points (if any), and the therapeutic activity of a remedy, is as yet undetermined; indeed, it is as yet unconsidered. Although this phase of colloidal activity has for some time taken my thought in pharmaceutical application, both theoretical and by experimentation, the present article carries my first printed reference to the problem, which, however, I hope to enlarge upon in the future. So far as I know, this is the first mention of "Brownian Movements," in pharmaceutical literature.

It is to be remembered that the "specific medicine" that furnished this astonishing number of Brownian points, is composed of but a small portion of solid material, dissolved in the appropriate menstruum. Evaporating a portion of this liquid to dryness, we find that each cubic centimeter contains but 0.067 grammes of solid material, this infinitesimally small portion of solid material furnishing the above named 2,300,000,000 Brownian points.

<sup>1</sup> A Spencer microscope was employed, fitted with Spencer "Dark Field Illuminator," oil-immersion, one point 8-mm. objective, and ocular 10x, with arc illumination.

<sup>2</sup> In my opinion, these suspensions consist of colloidal masses in which Brownian groups are collected together. The liquid viewed in bulk, under a direct ray, is hazy compared with pure distilled water, much like the Milky Way as contrasted with the star-sprinkled adjacent heavens. The Brownian movements visible in the count could scarcely make this opalescence.

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## SUBSTITUTIONS AND ADULTERATIONS.

From our brief botanical description, it will be perceived that under the name "Echinacea," as well as under the common names "Black Sampson" and "Niggerhead," plants more or less closely related might naturally, and without fraudulent intent, be thrown upon the commercial market. Indeed, as has been shown (page 2), "Black Sampson" (*Echinacea purpurea*), under the name *Rudbeckia purpurea*, was used long preceding *Echinacea angustifolia*, and for similar purposes. It is therefore not surprising that in the beginning of the use of *Echinacea angustifolia* admixtures appeared in commerce, which possibly led to confusion concerning the value of the drug.<sup>1</sup> Inexcusable were most, if not all, the substitutions offered on the market. For example, one lot of six thousand pounds and upward of so-called *Echinacea* root that came to my attention was a totally distinct plant that I was unable to identify. Its root (Fig. 12) was a full inch in diameter when dried, while the broken fragments, from eight to twelve inches in length, possessed no resemblance whatever to *Echinacea*, either in appearance or quality. Altogether inexcusable is the sophisticant *Lespedeza capitata* (Fig. 13), which resembles the true drug in neither leaf, flower, nor root. A more rational sophisticant, quite freely offered in the early days, was the root of *Eryngium aquaticum*. This plant, by its cone-shaped flower alone (Fig. 14), might easily mislead ignorant collectors (contrast *Echinacea*, Fig. 19), though it differs from *Echinacea* in both the leaf and the root (Fig. 15), which is altogether unlike that of *Echinacea*. Another sophisticant that I have encountered is *Helianthus canticularis* (Fig. 16), gathered, presumably, through the ignorance or carelessness of the collectors, by reason of a fancied resemblance of its flower to that of *Echinacea*. Perhaps the most annoying sophisticants have been the roots of the various species and varieties of these wild *Helianthus*. Still further complications embrace plants such as *Rudbeckia nitida*, which in miniature resembles *Echinacea* in its delicate cone. A specimen of this (Fig. 18), thrown on the market, carried both top and root, but is far from the cone of *Echinacea* (Fig. 19). Figure 20 pictures an inexcusable substitute from an undetermined shrub. Its long woody rootlets much resembled those of *Veratrum viride*. These were about the size of small *Echinacea* and, in section, presented a similar greenish coloration. In no sensible direction, however, did this sophisticant approach *Echinacea*. Another annoying sophisticant presented an admixture of a fibrous root (Fig. 21) somewhat resembling that of *Helonias dioica*.

Complications such as these made the *Echinacea* problem very perplexing to those dependent for supplies at the early stages of commercial crude drug. Be it said, however, that dealers in botanic drugs have exercised every effort to educate collectors as well as to obtain and supply the genuine *Echinacea*, seeking in every way possible to prevent sophistications and adulterations.

The importance of the substitution phase of the *Echinacea* problem was early perceived by Professor Felter, who as early as 1893 contributed as follows to the *Annual of Eclectic Medicine and Surgery*:

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<sup>1</sup>In figuring some of these sophisticants, our purpose is not alone to familiarize readers with past conditions that have rendered plant pharmacy so annoying, but to indicate some of the perplexing problems that come to manipulative pharmacists but which happily the physician is spared.—J. U. L.

ECHINACEA ANGUSTIFOLIA.



Fig. XII.



Fig. XV.

*Eryngium aquaticum*, reduced.



Fig. XVI.

*Helianthus Lenticularis*,  
reduced.

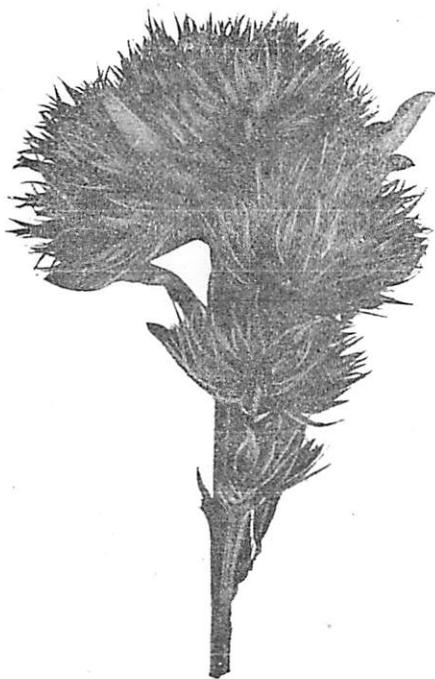


Fig. XIII.

*Lepedeza capita*, dried.

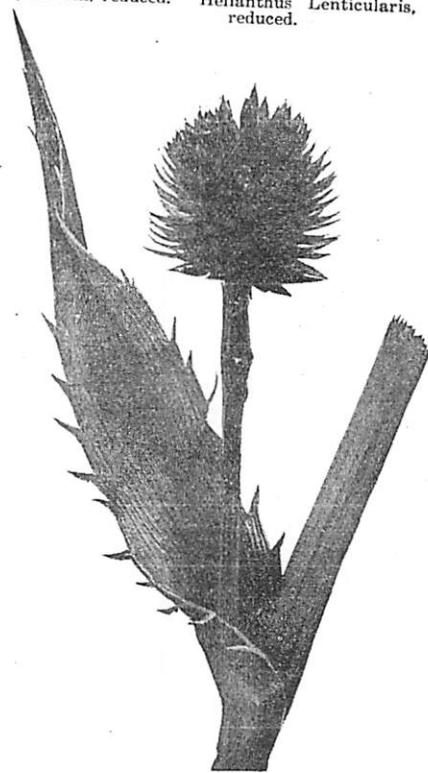


Fig. XIV.

*Eryngium aquaticum*.

ECHINACEA ANGUSTIFOLIA.

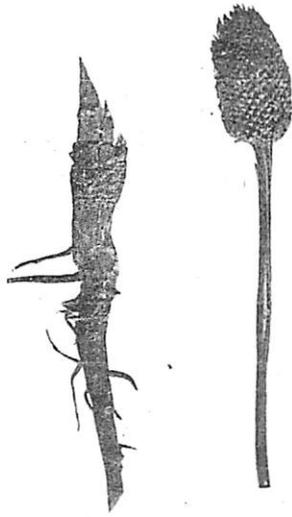


Fig. XVIII  
*Rudbeckia nitida.*



Fig. XX.  
*Echinacea adulterant (undetermined).*

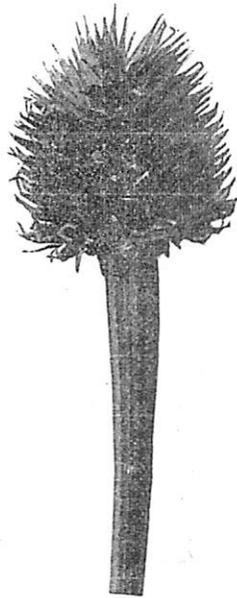


Fig. XIX.  
*Echinacea*

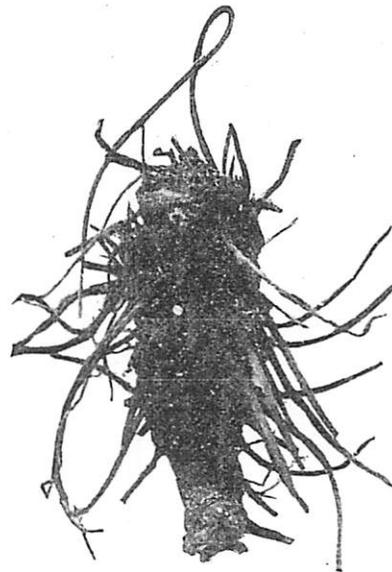


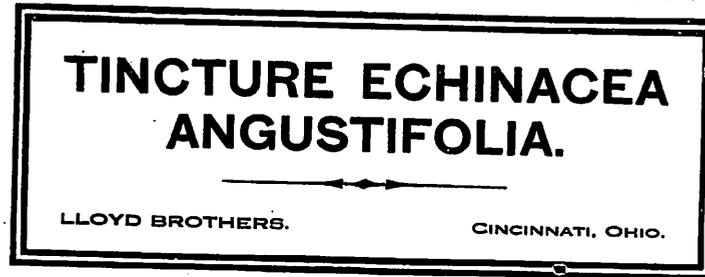
Fig. XXI.  
*Echinacea adulterant (undetermined).*

## ECHINACEA ANGUSTIFOLIA.

"It must be borne in mind that, like a few other Eclectic drugs, echinacea, if of poor quality, is worthless; and consequently the reputation of a really valuable drug may become lost through the introduction of a large quantity of an inferior root that does not fully represent the power attributed to the drug from which the foregoing good results were obtained. This is mentioned because of the fact that at present large quantities of the drug are now on the market that are valueless as remedies. None of the echinacea growing east of the Mississippi river will give a reliable product, and yet this is the material that is being largely sold, and will prejudice one against good echinacea."

### PHARMACEUTICAL RECORD.

Owing to what this writer now views as inexcusable prejudice, he persistently refused to introduce and distribute any Echinacea preparation until some time after Dr. King had reported favorably concerning the action of the drug, both in his own home in the treatment of Mrs. King (see pages 4 and 32) and in his general practice.<sup>1</sup> Dr. King's opinion concerning its therapeutic value became so pronounced as finally (several years afterward) to lead him to advise Lloyd Brothers to place on their list a "tincture" of Echinacea (see label, this page). This



Original Label (No. 1).

became necessary from the fact that, through journal articles by physicians using it, and personal commendations from Dr. King and others who continuously used the remedy, physicians were soliciting preparations of Echinacea. Their desire, fortified by Dr. King's personal and constant appeals to the effect that "Echinacea is a valuable remedy, and physicians should have the benefit of it," finally induced Lloyd Brothers (who were continuously mentioned by physicians using Echinacea) to place its preparations at the command of the medical profession.

Rapidly an increased demand for Echinacea preparations now followed, which, through journal contributions from physicians, brought many requests for literature concerning the drug, as well as for reprints of physicians' reports and their uses of Echinacea. This necessitated descriptive prints and reprints, which were liberally prepared.

<sup>1</sup>The introduction of Echinacea to the medical world, must be credited wholly to Dr. King's confidence in the remedy.

## ECHINACEA ANGUSTIFOLIA.

and it may be added that at the present time (1917) the demand for such literature is as pronounced as though Echinacea were a newly introduced drug.

**Summary.**—Echinacea stands conspicuous in that, in the face of its exceedingly lukewarm reception by those under whose auspices it was destined to be introduced, as well as pronounced resistance it met elsewhere, it has earned for itself, in the phenomenally short period of thirty years, the exceptional place it now occupies with American practicing physicians. It is (1917) the most used American drug introduced since eighteen hundred and eighty-five. My own delay in its general introduction is to me now a subject of self-criticism. I am now more pronouncedly of the opinion, as experiences multiply, that a person who is restricted to laboratory experiments, especially if he be more or less adversely prejudiced (as was I against Echinacea), is not in a position to judge with discretion. Nor is a laboratory man to be considered as "authority" in clinical directions,<sup>1</sup> which applies no less forcibly to inadequate drugs introduced under laboratory propaganda than to those *worthy* decried thereby.

**First Advertisements of Echinacea.**—Although reproductions of professional reports had long become imperative and had been distributed in pamphlet form, no mention of Echinacea in journal advertisements was made until the use of its preparations had become very extensive. Ten years after its introduction, in February, 1899, a telegram was reproduced in fac simile in the advertising pages of the *Eclectic Medical Journal*, Cincinnati, as follows:

Lloyd Brothers,  
Court & Plum Sts.,  
Cincinnati, O.

Canandaigua, N. Y., Jan. 19th, 1899.

Send two pounds of Echafolta<sup>2</sup> at once.

Dr. J. A. Hawley.

<sup>1</sup>Seemingly, a number of "experiences" were necessary to teach me this lesson. Crataegus, commended first in the *New York Medical Journal* for heart disease, was not only for months kept out of Lloyd Brothers' list, but was even satirized by Mr. C. G. Lloyd, in the following words: "If there be anything in Crataegus, the hogs should have long since have discovered its value, because hogs eat the fruit in quantities." One correspondent asked, "Well, did you ever know a hog to be affected with heart disease?"

Another instance of a too great conservatism in supplying a needed remedy, was in the direction of Subculoyd Lobelia, the second hypodermic plant preparation, some of which are exceedingly useful. Perhaps a more inexcusable delay was, however, in the direction of the refinement of *Compound Lobelia Powder*, which is now a standard, America over, under the term Libradol. This compound, as is recorded in print, I declined to consider necessary, for several years.—J. U. L.

<sup>2</sup>"Echafolta" is the trade name of a pharmaceutical preparation of Echinacea, designed for surgical use. From this the coloring matters, and the sweet principles of the drug, are excluded, as explained on the label. It is not a mixture or a drug compound.

## ECHINACEA ANGUSTIFOLIA.

Not until twenty-one years after its first use by Dr. King, eleven years following the aforementioned date (*E. M. J.*, 1910), was Echinacea formally advertised in any journal, though, as has been stated, prices current references, reproductions from reports by physicians, contributions to journals, and a label giving uses (label No. 2) had been (1894) printed in response to the phenomenal demand for information that came from both physicians and pharmacists. Then (1910) one descriptive page was inserted in the Cincinnati *Eclectic Medical Journal*.

As the use of Echinacea increased, reports multiplied from physicians who employed it in their practice, but these, instead of discrediting the original claims of Dr. Meyer, bespoke its favor in so many seemingly dissimilar disorders as to confound one who, like myself,

Specific Medicines.

**ECHINACEA.**

LLOYD BROTHERS, CINCINNATI, O.

Specific Use: An alternative of great value in strumous diathesis, syphilis, old sores and wounds. A powerful antiseptic, locally and internally, in diphtheria, typhoid conditions, cholera infantum, blood poisoning.

Dose: Gtt. v to  $\mathfrak{z}$ i, every one to four hours, in a little water.

As a local application in inflammation and poison, apply a mixture of Sp. Med. Echinacea,  $\mathfrak{z}$ i, water,  $\mathfrak{z}$ iii to  $\mathfrak{z}$ viii.

Label No. 2.

had been so skeptical concerning its therapeutic value, and who had so reluctantly acquiesced in making its pharmaceutical investigation.

These reports were based upon the original article of Dr. Felter, which was as follows:

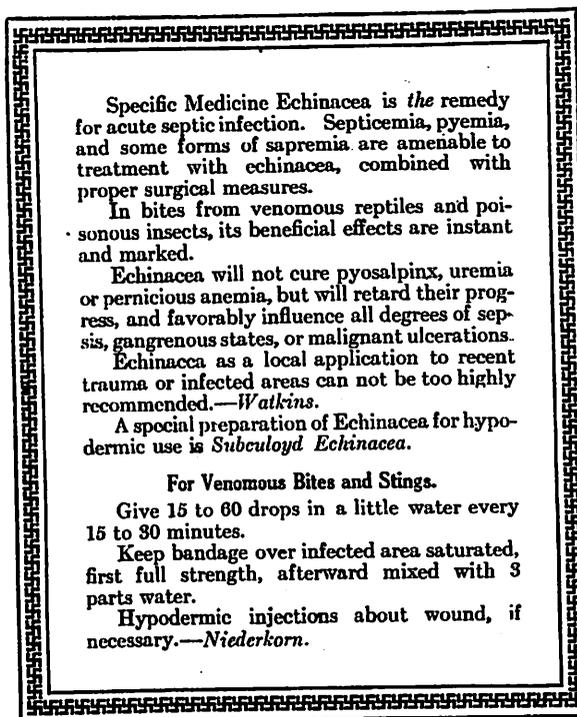
“Conspicuous among the remedies introduced within recent years, echinacea undoubtedly takes the first rank. Much has been written concerning this drug—more by the way of endorsement than of condemnation. There is no doubt that its exact position is not yet fully determined. Echinacea has come to stay, and will eventually find its specific place in therapy. As with all new remedies, it has suffered the usual over-estimation, in that it has been indorsed

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for almost the whole range of human ailments, and the exaggerated claims made for it led Professor Lloyd, for a long time, to view it with suspicion. Many over-sanguine statements concerning its wonderful—yes, practically impossible—virtues have, however, been judiciously withheld from publication, lest a remedy of great value should be placed in bad repute through exaggerated reports—a condition that has not been altogether avoided even by this care. But is this not the record of the majority of the most important of our drugs?"—Prof. H. W. Felter, M.D., Cincinnati, Ohio. *The Eclectic Medical Journal*, Feb., 1898, p. 79.

The revised label of uses, now introduced, was also written by Dr. Felter, after several years of experience in the use of Echinacea had passed. It is reproduced on page 14 (Label No. 2):

To this a back label, by Drs. Watkins<sup>1</sup> and Niederkorn,<sup>2</sup> was added, as follows (label No. 3):



Label No. 3

After this date, as well as preceding, manufacturing pharmacists generally placed preparations of Echinacea on their lists, the same now being articles of commerce.

<sup>1</sup>Lyman Watkins, M.D., author of "Compendium of Practice."  
<sup>2</sup>J. S. Niederkorn, M.D., Versailles, O., author of "Handy Reference Book."

## ECHINACEA ANGUSTIFOLIA.

### WHO ESTABLISHED ECHINACEA?

The foregoing history demonstrates that Echinacea was not promulgated through commercial propaganda. It made its own way in the face of unusual indifference on the part of those by whom it should, decades previously, have been introduced to the profession, as well as exceptionally pronounced criticism and prejudice on the part of others. Let us, with this thought in mind, review some of the renitent features accompanying the progress of this now notable remedy.

1. Echinacea was not introduced under authoritative auspices, such as might establish it in the practice of physicians generally. On the contrary, its origin as a constituent of a "home cure" remedy, made by an illiterate, unknown physician, was used as an argument to authoritatively condemn it.<sup>1</sup>

2. The name "*Eclectic*" was closely linked with its first professional appearance. This, in former times, was sufficient to prevent numbers of very worthy physicians from using it at all.<sup>2</sup>

3. John King, M. D.,<sup>3</sup> "*The Irregular*," was conspicuous in its introduction. His name was at that date tabooed in the literature of rival schools, and is even now, in partisan print, neglected in directions where a scientific man would feel humiliated were he to omit "credit to whom credit is due." In well-informed circles, however, such professional prejudice has gradually disappeared under a better understanding of Dr. King's ideals, accomplishments and methods. Dr. Charles Rice, thrice Chairman of the Committee of Revision of the *Pharmacopœia of the United States*, passed the following encomium on Dr. John King and his great work, the *American Dispensatory*:

"It constitutes a precious encyclopedia of medical American plants, and their therapeutical uses. It is a very useful work for reference. Its author is as fine a botanist as a judicial observer of therapeutical effects."—Translation from the French of Dr. Charles Rice's "*Note sur Certains Medicaments Vegetaux Americains*."

Dr. Charles Mohr, the talented botanist and physician-pharmacist selected by the Government to describe the "*Trees and Forests of the South*," for the Census of 1880, at the close of a visit to Dr. King, repeated, over and over again:<sup>4</sup>

"What a delightful gentleman! And this is Professor King, the author of the *American Dispensatory*! What a cultured man!"

4. Several "home cure" compounds, as well as several complicated secret pharmaceutical products advertised to both the laity and the profession of medicine, gave an unsought reputation to the name Echinacea. This, however, was neither the fault of the drug nor of its professional friends.

5. Physiological action under laboratory tests, made under the auspices of

<sup>1</sup> Since every plant remedy of the American Pharmacopœia was thus introduced, or the knowledge of its use obtained from the aborigines of various lands, no particular discredit can be cast upon Echinacea because of its humble origin.

<sup>2</sup> Fortunately, broader views now prevail. Few physicians now permit their professional opportunities to be restricted by medico-political prejudices.

<sup>3</sup> For years I made all the preparations used by Dr. King, at his home and in his practice. He repeatedly urged me to advertise Echinacea to the medical profession. As repeatedly stated herein, my indifference to his requests is now to me a source of humiliation.

<sup>4</sup> From Biography of Dr. King by J. U. L., Journal Am. Pharm. Assn., 1914. Very precise was Dr. King in statement and act. Often did he lament to me that in the first edition of his one thousand and eighty page Dispensatory (1852) a mistake in spelling had been uncorrected, and the term White Lard used where White Lead was intended.

—J. U. L.

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the Council on Chemistry and Pharmacy, Am. Med. As., gave no energetic response. Whoever fully relies on such phases of drug influence as being all-sufficient in establishing therapeutic values, must needs, therefrom, consider Echinacea therapeutically inert.

6. No University professor of materia medica or practice, and no publication under "authoritative control," has, so far as is recorded, commended Echinacea, either in word or print. Consequently their negative testimony, whether accepted as being due to hostility or indifference, has not been serviceable to the introduction of the drug as a remedy.

7. The latest revision of the *Pharmacopeia of the United States* refused Echinacea even a descriptive place in its pages, nor has any preparation of Echinacea ever been officially recognized by that publication. The Dispensatories (excepting the *American*, which devotes much space to it) in their later editions refer to the drug, but their therapeutic editors refrain from its commendation.<sup>1</sup>

8. The neglect or passing references of other most excellent works is well known, and needs scarcely be mentioned. The *Journal of the American Medical Association* has repeatedly asserted that Echinacea has no therapeutic value. Quotations from this exceptionally important publication may serve as examples:

"According to J. U. Lloyd (*Pharm. Review*, vol. xxii, p. 9-14), the introduction of Echinacea into eclectic medicine is due to the efforts of Dr. H. C. F. Meyer to increase the sale of Meyer's Blood Purifier, a secret remedy containing it. The following is a literal copy of the label on this nostrum:

### MEYER'S BLOOD PURIFIER

#### Directions

Take one ounce three times every day in the following cases: *Rheumatism, Sick Headache, Erysipelas, Dyspepsia, Old Sores and Bites, Open Wounds, Dizziness, Scrofula and Sore Eyes.*

In case of *Poisoning by Herbs, & C.*, take the double dosis, and *Bites of Rattlesnakes* take three ounces three times a day, until the swelling is gone. This is an absolute cure within 24 hours.

"After Lloyd had identified the plant, Meyer got the preparation out under another form with the following label (*J. A. M. A.*):

### ECHINACEA ANGUSTEFOLIA

This is a powerful drug as an Alterative and Antiseptic in all tumorous and Syphilitic indications; old chronic wounds, such as fever sores, old ulcers, Carbuncles, Piles, eczema, wet or dry, can be cured quick and active; also Erysipelas. It will not fail in Gangrene. In fever it is a specific; typhoid can be adverted in two to three days; also in Malaria, Malignant, Remittent and Mountain fever it is a specific. It relieves pain, swelling and inflammation, by local use, internal and external. It has not and will not fail to cure Diphtheria quick. It cures bites from the bee to the rattlesnake, it is a specific. Has been tested in more than fifty cases of mad dog bites in human and in every case it prevented hydrophobia. It has cured hydrophobia. It is perfectly harmless, internal and external.

Dose.—One half to one fluid-drachm 3 or 4 times a day.

Manufactured by H. C. F. Meyer, M. D.  
Pawnee City, Neb., U. S. A.

Patent

<sup>1</sup>This reference to the omission of Echinacea from these publications is made as a matter of record. This writer has surely no right to criticize others, or to be annoyed that anyone whosoever should neglect or discredit Echinacea, although in recent years he has attempted to make amends for his own early mistakes.—J. U. L.

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Comments of the Editor of the Journal Am. Med. Soc.—“These absurd claims of an evidently ignorant man have passed into the more recent proprietary advertising matters and into much of the eclectic writings. Indeed, the seemingly impossible has been attained by even surpassing Meyer's all-but-all-embracing claims. Not content with endorsing echinacea as a positive and speedy 'specific' for rattlesnake bite, syphilis, typhoid fever, malaria, diphtheria and hydrophobia, later enthusiasts have credited it with equally curative effects in tuberculosis, tetanus and exophthalmic goiter, and with the power of retarding the development of cancer.

“It is worth noticing—although it is not surprising—that these far-reaching claims have been made on no better basis than that of clinical trials by unknown men who have not otherwise achieved any general reputation as acute, discriminating and reliable observers. No attempt seems to have been made to verify these claims by accurate scientific methods, clinical or otherwise, although this could very easily have been done.

“Not one of the eulogistic reporters and exploiters seems to have considered it worth while to determine by the simplest control experiments whether the drug possesses any bactericidal or antiseptic powers whatever. It is therefore not very strange that discriminating physicians have failed to show much enthusiasm. One of the warmest endorsers of echinacea, C. S. Chamberlain (who later became the president of the Eusoma Pharmaceutical Company), complains that he has been unable to interest regular physicians in the remedy. He reviews the statements of previous authors and reports eight cases of infection, only two being acute or extensive, in which he used it with asserted success.

“In view of the lack of any scientific scrutiny of the claims made for it, echinacea is deemed unworthy of further consideration until more reliable evidence is presented in its favor.”—From the *Journal of the American Medical Association*, Nov. 27, 1909, p. 1836.

Let us further extract from the same publication a question and its reply:

“Echinacea.—*To the Editor:* Kindly inform me as to the real properties of echinacea.  
J. C. Robinson, Cedar, Utah.

“*Answer.*—Echinacea has been claimed to have anesthetic, sialagogue, antiseptic, diaphoretic, alterative and several other properties. Like many other discarded drugs, it has failed to sustain the reputation given it by enthusiasts years ago; it is now seldom prescribed under its own name. In common with numerous other little-used drugs, it is finding a place in proprietary mixtures, whose manufacturers make use of the early enthusiastic and unverified reports to endow their nostrums with remarkable therapeutic properties.” From the *Journal of the American Medical Association*, Feb. 27, 1909, pp. 720-721.

In the face of all this, one might ask,

Who Established Echinacea?—The drug that, since 1886, has become a therapeutic favorite with many thousand American physicians, and which is consumed in larger quantities to-day (1917) than

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any other American drug introduced during the past thirty years;<sup>1</sup> a drug that, a favorite in his practice, Dr. Felter, revising editor of the *American Dispensatory*, feared might be injured by reason of over-enthusiasm (see pages 15, 16), and which the editors of the *Journal of the American Medical Association* repeatedly condemned, (see pages 18, 19) one ground being that its discoverer was illiterate, and that both himself and the physicians who used the drug, made audaciously extravagant claims concerning its field of usefulness.

This writer believes the previous pages have answered this question, to wit, the American Indian *discovered it*, and the American physician *established it*.

**The American Indian.**—Dr. Meyer (see pages 3 to 6) states that he “discovered the therapeutic value of the root of this plant sixteen years” preceding 1887. He makes no statement concerning his informants, these being probably, as with Dr. Leachman (see below), either the Indians or the early settlers who themselves learned its virtues from the Indians.

Evidence is conclusive that Echinacea root was elsewhere introduced to the settler of the West, and probably as well to Dr. Meyer, by the Indians, who employed it in the form of decoction. Dr. J. S. Leachman, of Sharon, Okla., at the personal request of this reviewer (see *Gleaner*, October, 1914), contributed an historical article which is, in part, as follows:

*“Echinacea Root (Scurvy Root, Indian Head, etc.).*

*Its Uses by the Early Settlers in Oklahoma.*—Some time since. I promised Professor John Uri Lloyd to write for him the uses of ‘Indian head’ root, or Echinacea, by the natives and old settlers here. I have accordingly written out what I have been able to gain, both from my personal observation and from others.

“Old settlers all believe firmly in the virtues of Echinacea root, and use it as an aid in nearly every kind of sickness. If a cow or a horse does not eat well, the people administer Echinacea, cut up and put in the feed. I have noticed that puny stock treated in this manner soon begin to thrive.”

Thus we find, as with all natural drugs, credit for their beginning must be given the observing empiricist, who brought it to the attention of the profession.<sup>2</sup> Let us then pass to physicians’ early reports.

<sup>1</sup> The manner in which some drugs force themselves into prominence under adverse conditions, whilst others, introduced with “brazen trumpets,” by exceptional “authority,” quickly die, is one of the marvels of therapeutic history.—J. U. L.

<sup>2</sup> Does not the same rule apply to the natural foods? Who discovered the use of wheat? who gave us “Indian Corn”? Who established that the weed “Buck Wheat” could be used as food? What is the origin of the apple, the orange, of lettuce, asparagus, turnips, potatoes? Cut out the gifts of the “Wild Man” and the “ignorant empiricist,” and you will paralyze civilization, bankrupt humanity, beggar science, and starve the world.—J. U. L.

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### PHYSICIANS' ARTICLES ON ECHINACEA—1888 TO 1901.

"*Echinacea Angustifolia*.—July 7th, 1887, I was called to a case of diphtheria at Lockspur, forty miles south of Denver. Found a girl twelve years of age with the characteristic inflammation and exudation in the throat. She had voided no urine for forty-eight hours, and on attempting to use a catheter, found the same conditions existing in the vagina as in the throat. The only case of the kind which ever came under my observation. I pronounced the case hopeless and told the friends I could be of no further service. They had reached the same conclusion before I saw the case, but insisted on my doing something. I left the *Echinacea angustifolia* with instructions to administer it every three hours; also some oil *Eucalyptus* to be evaporated by means of hot water, so she could inhale it. I returned home, expecting to hear of the funeral in a few days.

"July 9th they called me again, thinking they could see some improvement. There was less exudation, but the symptoms of blood poisoning and exhaustion were so marked that I still insisted the case was hopeless, and told them not to send for me again unless there was marked improvement, which I did not anticipate. July 11th I saw the case again, and to my surprise and satisfaction it was convalescent.

"A few days afterward I had four cases of malignant diphtheria in the same family in West Denver. I expected to lose two of them, but the *Echinacea* carried them through safely. I did not waste any time with *phytolacca*, *baptisia*, *kali chlor.*, *kali bich.*, *sanguinaria*, etc. Had previously tested them all, as well as several other remedies, in two similar cases, which I lost. I do not mean to cast any discredit on these remedies in their proper sphere, but in my hands they are useless in malignant diphtheria. A few days ago I was called to two cases of diphtheria the same day. Used the *Echinacea*, and discharged both cases at the third visit.

"This last fall I have treated about fifteen cases of 'mountain fever.' Most doctors call it *typhoid*. I think the term 'remittent fever' covers all the symptoms. In every case, except one which changed doctors, the first week and run thirty-five days, the fever closed out on the fourteenth day. Used *Echinacea* in all. Aborted several other cases with *Echinacea* alone.

"Last month I took two cases of typhoid fever, one near the close of the first week, the other in its inception. Both had been exposed to sewer gas. The first case was convalescent on the 21st day, the second on the 14th. Used *Echinacea* in both cases.

"Oct. 23rd, 1887, I was called to a case with a history of blood poisoning and treatment with caustic, mercuric bichloride, and hot water—a man 65 years of age. Two physicians had given him up. I was much inclined to follow their example, but thought it a good case to test *Echinacea*. On entering the room, Prof. Scudder's 'rose' and Prof. Howe's 'tanyard dog' were visibly suggested by the intolerable stench. Examinations revealed a mass of dead flesh between the metacarpal bones of the index finger and thumb of the right hand. Lifting it, the metacarpal bone of the finger lay bare the entire length, both extensor and flexor tendons having sloughed off. The old man was very weak, and exhibited the characteristic symptoms of severe poisoning, so I dismissed the thought of amputation. Applied the *Echinacea* locally, diluting it one-half; also gave it internally, full strength. At the end of a week the patient was out of bed. The

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other day he walked into my office and exhibited his hand. The chasm is pretty well filled with healthy flesh, the bone being visible only at one small point. The edges of the wound contracted, and is so covered with skin that it is reduced to less than one-third its original dimensions. With the aid of a few skin-grafts I hope to close it up entirely."—By J. S. Hayes, M. D., Denver, Col.,<sup>1</sup> *The Eclectic Medical Journal*, February, 1888.

"*Echinacea Angustifolia*. Editor Journal: My limited time would not permit me to answer by mail the numerous inquiries concerning *Echinacea Angustifolia*. With your permission I will make a brief general report through your columns. The remedy is a new one, introduced by H. C. F. Meyer, M. D., of Pawnee City, Neb. See his article in the May number of the *E. M. Journal* for 1887, wherein he states that he has been familiar with the drug for sixteen years. Among other successes cited, he claims to have treated over six hundred cases of *Crotalus* poisoning. He thinks it may prove valuable in the treatment of rabies. In his last letter to me he cites some evidence on that point. I know of no other source besides the doctor himself, whence the remedy can be obtained, unless Lloyd Brothers, of Cincinnati, have it. (They supply it.—Ed.) My experience with it is very gratifying to myself, and I should not like to be without it as long as I am likely to meet cases of blood poisoning in any form."—J. S. Hayes, M. D., in *The Eclectic Medical Journal*, March, 1888.

"*Echinacea* in Carbuncles.—About the middle of January, of the present year, an elderly man, past sixty, called at the office and exhibited a purplish swelling on the back of his neck, which was perforated by small sloughing openings, and which he said was very painful. I diagnosed it as carbuncle and injected the openings with a mixture of olive oil, glycerine, and carbolic acid, twenty per cent of the mixture being acid.

The patient sent for me the following day to visit him at his home. I found him suffering more than on the previous day, and also found that the tumefaction had rapidly spread, so that a purplish roll of the periphery reached well upon the occipital region and downward on the nucha. A small slough marked the point of entrance of the injection, but it was evident that the abortive efforts had proven a failure.

I concluded that I had a fatal case on hand, considering the age of the patient; and the report of Professor Howe's case, which had just been received, assisted in coloring the prospects of the case with somber hue. Nevertheless, I considered it an opportune occasion for the testing of *echinacea* and prescribed it as follows:

℞—*Echinacea*, ʒij; aqua, q. s. ad ʒiv. M. Sig.: Moisten soft linen cloths of appropriate size and apply to the affected part. Renew every two hours. Also give a teaspoonful every hour by mouth.

The part sloughed rapidly, until by the end of the second week the skin and cellular tissue as high as the occipital protuberance, and nearly as low as the angle of the scapula, on the left side, and forward into the posterior triangle of the neck, were either absent or in a condition of sphacelus. Eventually a surface nearly the shape and as large as my hand sloughed away. The patient was

<sup>1</sup> This, aside from Dr. King's article on Dr. Meyer, is the first record I have located in Journal print, by a physician.—J. U. L.

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very much debilitated and suffered severely, as he was unable to rest his head upon the pillow in any position that did not cause pain in the affected spot.

The treatment consisted throughout of echinacea, locally and internally. It has now been about six weeks since I was first called, and the patient was on the street a week ago. There is still a granulating surface the size of a silver dollar on the back of his neck, which I am dressing with pinus ointment.

Though the patient suffered severely a portion of his time, his appetite and strength kept in remarkable condition throughout his most severe trial, and this I largely ascribed to the echinacea. I have just discharged a patient, a boy eight years of age, who has convalesced from cerebro-spinal fever (cerebro-spinal meningitis). This patient had nothing but echinacea throughout his illness, which lasted five weeks. It was a desperate case, and I did not expect him to recover. When first called I found the patient lying on his back in a partial opisthotonos, with flushed face, and complaining bitterly of headache and pains in the back. The next day he was delirious and very restless. He alternately screamed, crawled about the bed, and insisted on getting up. The pulse was small, rapid, and the temperature ran about 103°.

In a few days there were muscular tremors and periods of violent excitement, especially if disturbed by the nurse for the purpose of giving him his medicine or food (milk and lime water). During the early portion of his illness the patient chewed and pulled at his hair, which had been allowed to grow long, until he had pulled a considerable portion out of his head. After this his hands were muffled and the hair cut short.

Keating's Cyclopaedia contains the description of a complication of this disease which I have never noticed before, but which I observed in this case, viz.: herpes. This author asserts that this symptom is common, and due to nervous origin, and that the eruption occurs in patches as large as the hand, about the parts of the surface which are supplied by the fifth pair of nerves. The latter stage of the disease was marked by prostration and profuse sweating.

The patient slowly gained the last two weeks while in bed, but his mental faculties were last to return to normal condition. He had ten drops of echinacea every hour throughout his sickness. This constituted the medicine, while milk and lime-water were the nourishment, this being the only food he would accept. He was remarkably contrary and perverse throughout, though usually a very tractable child.

I have already put it on record that I first called attention to this application of Echinacea in practice."—*Herbert T. Webster, M. D.*, in *Homeopathic News*. Reprinted in *The Eclectic Medical Journal*, August, 1894.

**"Echinacea in Puerperal Septicaemia.**—What malignant diphtheria is to the child—what smallpox, cholera, and yellow fever are to the human race in general—septicaemia is to the puerperal woman, one of the gravest misfortunes that can overtake her. The unusual severity and fatality of this condition had rendered it one for which remedy after remedy has been tried—some with a modicum of success, others wholly without results. Some remedies have been praised for a time, but only to eventually pass into oblivion. It is with caution, therefore, that we accredit any new remedy with curative power in this dreaded disease. Still it is a condition we must face, and we should ever be on the alert for new resources, for 'some good fishes are still in the sea.' . . . Now a 'new

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Richmond is in the field.' Echinacea, one of our later accessions, which is unstintedly praised in various septic states, and depraved conditions of the blood, and a remedy which we will review in a future number, has been used in this disorder by one of our most conscientious and skillful practitioners in Kansas. The fact is mentioned here to stimulate inquiry into the action of the drug, that we may determine its value in this complaint."—*Editorial in the Eclectic Medical Journal, February, 1896.*

"Echinacea.—In the February *Journal*, page 98, I noticed an article on Echinacea in Puerperal Septicaemia, in which it is stated that a physician in Kansas has used the remedy in two cases of the above disorder; and this latter physician says that he has never heard of the remedy being used in this trouble by any one else. I wish to say that since August 17, 1894, I have used the Specific Medicine Echinacea in seven cases of septicaemia following confinements and abortions. . . . Doctors, if you want your cases of puerperal septicaemia to recover, give them echinacea, with antiseptic douching and absolute cleanliness. Have your nurses aseptic also. If your nurse is not clean, your case may die. I think I have known of such results."—*Dr. C. H. Rigg, Middletown, Mo., in the Eclectic Medical Journal, April, 1896.*

"Echinacea.—Echinacea has been for some years my first choice as an alterative in septic conditions. I use it internally and topically. I saved a limb with it last fall on a five-year-old boy, a case of typhoid fever relapse, and a fever sore on lower limb. For this case the environment was the worst. I finally succeeded in getting the family moved after three boys and the mother were down and father sick. Specific medicine, much of it echinacea, and close attention, saved all of them, as well as the small boy's limb, although all (myself excepted) said it must come off."—*F. Milton Friend, M.D., Lamar, Colo., in The Eclectic Medical Journal, October, 1896.*

"Specific Medicine Echinacea.—This is a remedy that is too poorly known, even among members of our own school of medicine, and wholly unknown to ninety-nine per cent of the 'regulars.' Notwithstanding some condemnation and assertions against this medicine, it is steadily working its way to the front. . . . I will relate one case which is free from all the objections that a skeptic might bring forward. Mr. K—, a gentleman of high standing who occupies the position of general yardmaster on one of the great railroads that terminate in this city, is a man of some forty years, and weighs nearly two hundred pounds; temperate in all things, and now looks a perfect picture of health. Some ten months ago he was annoyed by boils. One after another came and nearly teased the life out of him. He applied to the hospital of the Missouri Pacific Railroad in this city and received the attention of the head of the establishment, whose regularity would equal that of a country 'schoolma'am.' He was given medicines of all kinds save that necessary to give him relief. The suppurations grew worse, assuming the condition of carbuncles, and of these he had three or four at a time. The surgeon of the establishment cut and slashed these growths after the most approved fashion. This went on for some time until he man became completely discouraged and made up his mind that the trouble would kill him before he got through with it. At this juncture I put him upon echinacea in form of half an ounce of the specific medicine to a four-ounce mixture, a tea-

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spoonful every three hours. No more carbuncles or boils came. Those that he already had dried up and gradually left him. It has now been about two months, and he is entirely free from his former annoyance, and says he believed this medicine saved his life."—*Dr. E. R. Waterhouse, in the Eclectic Medical Gleaner. Reprinted in the Eclectic Medical Journal, November, 1896.*

**"The Newer Remedies—Echinacea.**—Perhaps this remedy is the most important one that has been introduced, in recent years into Eclectic medicine. It stands to-day the best remedy for fluid changes within the body. Remedies which act as this one does, produce changes, or prevent alterations, that we can not explain. All Eclectics are familiar with the results of baptisia medication when administered for its effects upon depraved states of the fluids. Its indications are plain and well known, yet who of us can explain in what manner and by what power it acts? We talk learnedly of antiseptics, and, expecting those which we know to act by chemically changing some deleterious substance, we know but little or nothing concerning their mode of action. Baptisia is known as an antiseptic, antityphoid, and antizymotic remedy, yet the exact action of the drug is not known; and for the reason that pronounced physiological effects have not been observed from certain drugs, they have been classed as inert, as this one has, by some practitioners. Yet every Eclectic has found baptisia very valuable when used according to its specific indications, and the indications for no remedy have been more clearly stated than those for the selection of baptisia.

While we are at present at a loss to express the mode of action of echinacea, we do know that it fills a place to which we have applied the term 'a corrector of blood dyscrasia.' Whatever the changes may be, we know that a better condition of the blood and the fluids, results from its use. It seems to cover the ground ascribed to antiseptics, antiferments, and antizymotics. Its first use was in those profound depressions produced by the introduction of such poisons into the blood as the virus of serpents and insects. Even extraordinary claims have been made for it in hydrophobia—a disorder that many persons believe to have an existence chiefly in the minds of the laity and some practitioners. That the poison which we know as typhoid, whatever that may be, but which condition we know well by its manifestations, is impressed by echinacea, we are assured by the many reports of its efficacy in typhoid and other adynamic fevers. That it corrects that disturbed balance of the fluids resulting in boils, abscesses, carbuncles, and many pus-forming cellular inflammations, we know by experience."—*Editorial in The Eclectic Medical Journal, November, 1896.*

**"Echinacea.**—Mrs. P., aged 85, during winters for the past five years, has had a peculiar trouble. It begins by itching on the hands and feet so intense that it is almost unbearable, as reported to me one year ago. In spite of all treatment her physician gave, the termination was by great watery blisters, breaking down in suppurating sores.

In January, 1896, I was called to see the patient. I found her with a severe bronchial cough, no fever, pulse regular, but slow and bounding. The lady was sitting up in bed, rubbing her hands and feet, and complaining of the terrible itching.

I placed her on echinacea (specific medicine), gtt. x every hour, and to her surprise the itching began to subside by the time she had taken three doses, and

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she was completely relieved in forty-eight hours without any blisters or sores following, as had been the case the three winters previous.

On the first of December, she took another spell of itching, same as before, and I prescribed echinacea, same doses as before, with like results. Of course, my patient feels grateful, yet I think we might score *another* for echinacea."—*J. C. Paxon, M. D., Jamesville, Ills., in The Eclectic Medical Journal, March, 1897.*

**"Lobelia and Echinacea.**—*Case 1.* A middle-aged woman, domestic, was attacked by severe pains in the stomach, which moved sometimes into the left side, and sometimes into the right, and into the back, and of such a severe and unremitting character, that it seemed the patient could not endure them long and live. Three hypodermic injections of one-fourth grain of morphia with 1-150 grain of atropia were given during the night, but only mitigated the pain and made it bearable for an hour or two after each injection, when it was evident that something must be done or she would die from the agony of it.

At this juncture, when I noticed the character of the pain, I thought of what the late Dr. J. M. Scudder had once said of lobelia in such cases, and at once gave her a ten-drop dose of the specific medicine, repeating it in twenty minutes, and then five drops. The pain was completely and permanently relieved, although some smothering sensation was complained of for a few hours afterward.

*Case 2.* A boy twelve years of age was bitten on the upper lip by some poisonous insect and great swelling and pain with an erysipelatous redness, spread up to the eyes. The first physician who saw him thought an ulcerated tooth was the cause of it, and sent him to a dentist, who extracted the one supposed to be the cause, but it was sound, and then the pain and swelling continued to grow worse. I was then called, and recognizing it as blood poisoning, made a solution of specific medicine echinacea by adding two drachms to four ounces of water, and gave a teaspoonful every two hours. There was manifest improvement in a few hours, and complete recovery in three days. Nothing else was used except a warm flax-seed poultice over the central seat of the pain. I now believe the case would have been sooner over if the doses had been repeated oftener. It is a remedy that I should place great reliance upon in cases of malignant diphtheria and measles, or indeed in any case with a virulent poison in the blood."—*J. C. Kilgour, M. D., Harrison, Ohio, in The Eclectic Medical Journal, November, 1897.*

**Echafolta in Septic Conditions.**—"During the recent summer, I believe I saved the life of a little negro boy by the use of Echafolta, and this remedy alone. He was about four years old, and his surroundings were of the most unsanitary character and his nursing the poorest imaginable. In spite of these unfavorable conditions he recovered after an exhaustive disease lasting more than two months. The trouble began very much like a case of continued fever, but of a low type. He continued to get worse and about the second week experienced an alarming condition approaching collapse. The heart action became very feeble and intermittent. Following this depression came an exhaustive diarrhea of a choleraic character. I easily controlled this diarrhea with rhus aromatica. At this juncture septic infection became evident and the lungs were involved with a pneumonia of quite pronounced severity. I then began administering ten-drop doses of Echafolta. This had the effect of mitigating the symptoms considerably, and in a few days his condition was so much improved that I stopped the remedy,

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and then the symptoms became greatly aggravated. I again resumed the Echa-folta, when a complete change for the better took place, but it was followed by another profuse diarrhea and I discontinued the Echafolta and again controlled the diarrhea with rhus aromatica. At this stage of the disease (third week) circumscribed, inflammatory swellings appeared on various parts of the body. These were sluggish, and, at first, quite painful, but soon developed into abscesses and would break spontaneously, discharging a sanious and offensive pus. The abscesses continued throughout the course of the disease (ten weeks) and numbered at no time less than six, appearing chiefly near the joints, on the neck, in the groin, on the back, and one on the scalp. Feeling convinced at the time that Echafolta was the only remedy administered that seemed to hold the disease in check, I put him on ten-drop doses every three hours and kept him on it until complete recovery took place. From what I observed in this case I believe that the boy could not have lived without the remedy, for whenever it was discontinued he became alarmingly worse, and whenever it was resumed, his condition became better so promptly that I could attribute it to no other cause. The boy to-day is strong and hearty and shows no ill effects of his serious illness."—*H. W. Felter, M. D., Cincinnati, Ohio, E. M. Journal, 1901.*

The foregoing comprise the total contributions for seven years on Echinacea in that standard Journal (The Eclectic Medical Journal, Cincinnati) devoted for over half a century to botanical therapeutics. They proved sufficient, however, to introduce the drug to physicians generally, who, after using it, increasingly commended Echinacea in convention discussions as well as by personal suggestions. The standard works on materia medica and practice, devoted to botanical therapeutics, next successively gave it appropriate space. These, together with increasing journalistic contributions from practicing physicians, brought Echinacea into its great repute. Let us next quote portions of what representative authors presented to their readers:

### EXTRACTS FROM WORKS ON MATERIA MEDICA AND PRACTICE.<sup>1</sup>

*"Echinacea angust. for Blood, Tissues.* An alterative of great value in stru-mous diathesis, syphilis, old sores and wounds. A powerful antiseptic, locally and internally, in diphtheria, typhoid conditions, cholera infantum, and in blood poisoning."—From *"The Physician's and Student's Ready Guide to Specific Medi-cation,"* 1892, by J. S. Niederkorn, M. D.

*"Sp. Med. Echinacea for Blood.*—To correct 'bad blood,' boils, carbuncles, various forms of septicaemia, tendency to formation of cellular abscesses, septic conditions in general. *Dose:* From 10 drops to 30 drops every 1 to 3 hours."

*"Lloyd's Echafolta for Diarrhea and Dysentery.*—Large, foul-smelling dis-charges, vitality low, purplish or brownish-black colored tongue. *Dose:* From 1 to 10 drops in water every 1 to 3 hours.

<sup>1</sup> Many of these devote pages in detail to the use of Echinacea. Works on Practice, particularly, consider it in numerous affections. Such as these cannot be satisfactorily sum-marized.

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"*Specific Medicine Echinacea in Fevers.*—Septic and typhoid fever, bluish coloration of mucous membrane, tongue brownish or almost black, foul discharges, all conditions point to sepsis. *Dose:* Ten to 20 drops in water every 2 hours. Of Lloyd's Echafolta, I administer 20 drops every 2 to 3 hours.

"*Sp. Med. Echinacea—Mammary Gland.*—In suppuration of, if there is evidence of sepsis, and the usual symptoms of infection. *Dose:* Twenty drops every 2 hours.

"*Sp. Med. Echinacea—Mouth.*—An ulcerated sore mouth, ulcers inclined to slough, tissues look lifeless and bluish, bad breath. *Dose:* Ten to 20 drops every 2 to 3 hours.

"*Sp. Med. Echinacea in Rheumatism.*—Chronic rheumatism, where 'bad blood' is plainly in evidence, excretory organs deficient. *Dose:* Twenty drops every 3 hours.

"*Sp. Med. Echinacea—Skin and Tissue.*—Tendency to formation of multiple cellular abscesses, bluish coloration of skin; evidence of 'bad blood.' *Dose:* Twenty drops every 3 hours.

"*Sp. Med. Echinacea—Stomach and Intestines.*—Foul-smelling vomiting or offensive, foul intestinal discharges, tendency to sepsis, exhaustion; dirty brownish-black tongue, especially in fevers. *Dose:* Twenty to 30 drops every 2 hours. Of Echafolta, same dose."—Extracts from "*A Handy Reference Book,*" by J. S. Niederkorn, M. D.

"*Echinacea. Antiseptics.*—This remedy is one of the most important of our recent accessions. It is both alterative and antiseptic. It is used in many disorders of the blood, as syphilis, scrofula, and chronic ulcerations. It is one of the reliable remedies for 'blood poisoning.'

Echinacea causes an excessive flow of saliva and perspiration. The fresh root scraped and given freely is the treatment used by the Sioux Indians for snakebite. It is a remedy of some value in typhoid fever, and is well spoken of in diphtheria, spinal meningitis, and in unhealthy conditions of the mouth and fauces. It may be employed in cases in which Baptisia is useful.

The dose of this remedy ranges from two to ten drops of the Specific Medicine diluted with water."—From "*Locke's Materia Medica and Therapeutics,*" edited by H. W. Felter, M. D., 1895.

"*Echinacea, Sp. Med.*—Strumous and syphilitic diathesis, ulceration with profuse secretion, tendency to systemic poisoning, foul phagedenic ulcers, diarrhoea with nausea and vomiting, profuse and bad-smelling discharges, purplish skin with bluish shining appearance, vesicular eruptions, viscid exudations, painful superficial irritations, burning of surface, breath offensive, dusky colored mucous membranes, profuse acrid saliva, tendency to gangrene and sloughing, weakness and emaciation. Ten drops to one drachm in four ounces water; teaspoonful every three hours."—From "*Compendium of the Practice of Medicine,*" 1895, by Lyman Watkins, M. D.

"*Echinacea.*—Under the older classification of remedies, echinacea would probably be classed as an antiseptic and alterative. Strictly speaking, it is practically impossible to classify an agent like echinacea by applying to it one or two words to indicate its virtues. The day is rapidly approaching when these qualify-

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ing terms will have no place in medicine, for they but inadequately convey to our minds the therapeutic possibilities of our drugs. Especially is this so with regard to such terms as alterative, stimulant, tonic, etc. If any single statement were to be made concerning the virtues of echinacea, it would read something like this: 'A corrector of the depravation of the body fluids,' and even this does not sufficiently cover the ground. Its extraordinary powers—combining essentially that formerly included under the terms antiseptic, antifermentative, and antizymotic—are well shown in its power over changes produced in the fluids of the body, whether from internal causes or from external introductions. The changes may be manifested in a disturbed balance of the fluids resulting in such tissue alterations as are exhibited in *boils, carbuncles, abscesses, or cellular glandular inflammations*. They may be from the introduction of serpent or insects venom, or they may be due to such fearful poisons as give rise to *malignant diphtheria, cerebro-spinal meningitis, or puerperal* and other forms of *septicaemia*. Such changes, whether they be septic or of devitalized morbid accumulations, or alterations in the fluids themselves, appear to have met their antagonist in echinacea. 'Bad blood,' so called, *asthenia, and adynamia*, and particularly a *tendency to malignancy* in acute and subacute disorders, seem to be special indicators for the use of echinacea. . . .

*Specific Indications and Uses.*—To correct fluid depravation, 'bad blood,' tendency to sepsis and malignancy, as in gangrene, sloughing and phagedenic ulcerations, carbuncles, boils, and various forms of septicaemia; foul discharges, with weakness and emaciation; deepened, bluish or purplish coloration of skin or mucous membranes, with a low form of inflammation; dirty-brownish tongue; jet-black tongue; tendency to the formation of multiple cellular abscesses of semi-active character, with marked asthenia. Of special importance in typhoid, septicaemic and other adynamic fevers, and in malignant carbuncle, pulmonary gangrene, cerebro-spinal meningitis and pyosalpinx. Echafolta is advised as a cleansing wash in surgical operations, and to annul the pain of and to deodorize carcinomata."—From *King's American Dispensatory*, Vol. I, nineteenth edition, 1905.

*Echinacea Angustifolia—Antiseptics, Antizymotics, Correctives.*—This remedy promises to fill one of the most important purposes of any of this class. It is comparatively a new one, but has already afforded eminent satisfaction to quite a large number of Eclectics as a corrector of depraved states of the blood, where ordinary remedies have failed to satisfy the demand.

It resembles both baptisia and rhus tox., in some respects, though as a remedy for the septic phase of typhoid fever, where there is a tendency to gangrenous states it excels the former remedy, while in erysipelas where sloughing is imminent it is preferable to the latter. Its action seems to be more that of a restorative to the tissues generally than these, while it possesses none the less power as an antiseptic.

*Echinacea—The Nervous System.*—Echinacea is also a pain-reliever of no mean merit. I have found it to relieve the intense pain of erysipelatous phlegmons, where there is considerable swelling and induration with little disposition toward purulency, very promptly when applied locally and administered internally. Dr. A. S. Tuchler found it to relieve the excruciating pain of cancer promptly when administered internally, in the advanced stage of a cancer in-

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volving the fauces—and the drug was found to control the pain until death ensued, though it would return when the remedy was discontinued.

*"Echinacea Angustifolia—The Circulatory System.*—Its influence on the capillary circulation is not comparable with that of any other remedy known, for while it is a stimulant to the circulation in these vessels it also seems to endow them with a certain amount of recuperative power or formative force by which it is constituted not only a general stimulant and tonic to the circulation, but also peculiarly so as regards local inflammations of debilitated or depraved character. . . . Internally and locally it is the remedy for malignant carbuncle. In erysipelas with phagedenic tendencies it should be given internally and applied locally. . . . As a sedative, it is comparable, in some respects, with baptisia, rhus tox., lobelia, aconite and belladonna; partaking of the properties of all, but excelling them in every respect.

*"Echinacea—The Skin.*—Echinacea is a remedy of rare virtue when superficial irritation of acute and painful character is met. Burning of the surface, with redness, is a good indication for its use. In some very severe cases of this kind I have met with gratifying success from the continued local and internal use of the remedy.

In chafing and other forms of erythema, echinacea is one of the most reliable remedies we possess, not only for temporary relief of the burning and itching, but for permanent cure. The internal use of the agent seems to relieve the system at large, or else the skin itself, of the irritable element which predisposes to the condition."—From *"Dynamical Therapeutics,"* by Herbert T. Webster, M. D., second edition.

*"Indications for Remedies—Echinacea.*—A powerful antiseptic, locally and internally, in the bite of the rattlesnake, diphtheria, typhoid conditions, blood poisoning, and an alterative of great value in strumous diathesis, syphilis, old sores and wounds. Gtt. v. to ʒj."—From *"Eclectic Practice of Medicine,"* 1906, by Rolla L. Thomas, M. S., M. D.

*"Echinacea Angustifolia—Specific Indications.*—The indications for echinacea are found in every instance of septic poisoning, hence the specific indications will be tongue coated dark and the secretion foul; putrescent odor; puerperal septicaemia; pyaemia, etc.

Echinacea is our most efficient remedy whenever there is evidence of sepsis, and will be found the best internal antiseptic known to the profession.

*Dose.*—The dose is from 5 to 60 minims of the Specific Medicine or fluid extract."—From *"The Essentials of Medical Gynecology,"* 1907, by A. F. Stephens, M. D.

*"Echinacea Angustifolia—Hedge-hog Cane Flower.*—The basic action of echinacea is believed to be on the fluids of the body, and that such action is antagonistic to the state usually referred to as 'blood depravation' we have an abundance of evidence. Echinacea exerts an influence which opposes morbid accumulations in the fluids, as well as abnormal change in the fluids themselves. Bad blood and its consequence, a loss of vital power, are the most prominent conditions in which it is indicated. In diseases prone to assume a malignant char-

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acter, such as carbuncle, septic ulcerations and abscesses, gangrenous conditions, sloughing erysipelas, stings and bites of insects and reptiles, its corrective action is most decided and unmistakable.

Wherever disease results from lack of vital force, from a tendency to morbid changes, from a depraved state of the fluids, from blood-poisoning, or from a tendency toward disintegration of tissue, echinacea should always constitute at least a part of the treatment.

*Indications.*—Tongue coated black; putrescent odor from excess or broken-down material being eliminated from the system, as in scarlet fever, diphtheria, spinal meningitis and typhoid fever; strumous diathesis; old sores and wounds; snake bites and bites of rabid dogs; tendency to boils and carbuncles; foul discharges from weakness and emaciation; deepened, bluish or purplish coloration of the skin or mucous membranes, with a low form of inflammation; dirty, brownish tongue; tendency to the formation of multiple cellular abscesses of semi-active character; with marked asthenia. Locally: As a cleansing wash in surgical operations; to deodorize carcinomata; gangrene."—From "*Specific Diagnosis and Medication*," 1909, by John William Fyfe, M. D.

*Echinacea Angustifolia—Specific Symptomatology.*—It is the remedy for blood poisoning, if there is one in the *Materia Medica*. Its field covers acute auto-infection, slow progressive blood taint, faults of the blood from imperfect elimination of all possible character, and from the development of disease germs within the blood. It acts equally well, whether the profound influence be exerted upon the nervous system, as in puerperal sepsis, and uraemia, or whether there is prostration and exhaustion, as in pernicious malarial and septic fevers, or whether its influence is shown by anaemia, glandular ulceration or skin disease.

It is especially indicated where there is a tendency to gangrenous states and sloughing of the soft tissues, throat dark and full, tongue full, with dirty, dark-brown or black coat, in all cases where there are sepsis and zymosis.

It undoubtedly exercises a direct sedative influence over all of the fever processes in typhoid, cerebro-spinal meningitis, malarial fevers, asthenic diphtheria, etc., for while it equalizes the circulation, it also acts as a sedative to abnormal vascular excitement and lowers the temperature, if this be elevated, while if this be subnormal, the singular effect upon the vital forces conspires toward a restoration of the normal condition. As a sedative it is comparable in some respects with baptisia, rhus and bryonia.

I think this sedative influence is largely exercised through its power to destroy the germs of the infection, thus removing the cause.

*Therapy.*—Echinacea is par excellence a corrector of any depravation of the body fluids. It influences those conditions included under the terms septic, fermentative and zymotic. Those which manifest themselves in a disturbed balance of the fluids, resulting in alterations of the tissues such as are exhibited in boils, carbuncles, abscesses and cellular and glandular inflammations. These same conditions result from the introduction of the venom of serpents and poisonous insects of every character, also from the introduction of disease germs from pus and other putrid and infectious sources.

As an intestinal antiseptic the agent is bound to take first rank with all physicians when once known. Experiments with it to determine its immediate in-

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fluence upon the fevers caused by continued absorption of septic material, such as typhoid fever, puerperal fever, and the fever of the afterstages of diphtheria, show that its influence upon the pernicious germs begins at once.

In several cases reported, where special sedatives were not given, the temperature has declined from one-half to two degrees within a few hours after its use was begun, and has not increased until the agent was discontinued."—From the "*New American Materia Medica, Therapeutics and Pharmacognosy*," 1915, by Finley Ellingwood, M. D.

I have attempted in the foregoing article to briefly record the history of the drug Echinacea. It is written in the first person, but, in no other way could I handle the subject satisfactorily. Professor King would undoubtedly have made a personal contribution concerning the uses of the drug in his own family had his life been spared. His use of Echinacea with Mrs. King is supplied as follows, by their daughter, Mrs. Elizabeth Karr, who now (1917) resides in the King homestead, North Bend, Ohio.

"Mother was an invalid for many years before her death. She suffered intense pain, and had discharges from what proved to be an ovarian cancer. Means to relieve her had been unsuccessful, and most of the time, for two years, she had been in bed, when finally Dr. King gave her Echinacea, with the result that the pain soon disappeared and the discharge ceased. She improved, left her bed, and was able to attend to her household duties. Whenever, owing to the lack of the proper medicine, there was a return of pain and more discharges, a few doses of Echinacea would bring relief. This condition of affairs lasted for several years. During the last year of her life a firm swelling also appeared in one of her breasts, which developed into a cancer, from which she died. The medicine named prolonged her life, although it did not effect a cure."—From Mrs. Elizabeth Karr, North Bend, O., December 25, 1909.

This historical treatise might well be accompanied by recent literature on the uses of Echinacea, and authoritative views of its field of action as at present accepted by physicians using it. This will be contributed later, with an introduction by Prof. R. L. Thomas, M. D.

This treatise would not be complete for the historical purpose intended, were the prices of the preparations not recorded. They are, for Echinacea and Specific Medicine Echinacea, as follows:

Four-ounce vial .....	\$0.75
Eight-ounce vial .....	1.40
Sixteen-ounce vial .....	2.75